

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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5 TITLE: SANDALS WITH DRAINAGE SYSTEM

SPECIFICATION

10 BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

The present invention relates to articles of footwear, such as sandals, which include a  
15 drainage system.

RELATED ART

Sandals, such as "flip-flops," "slides," "thongs," and other similar types of footwear, are often worn in environments where people participate in recreational water activities. Sandals are  
20 easy to put on and take off, and are often put onto wet feet when a person exits a water environment. As such, the upper surface of the sandal can become wet and slippery. Accordingly, it is desirable to drain water away from the surface of the sandal. It is also desirable to keep the water away from the underside of the sole of the sandal to minimize water under the sandal, thereby minimizing the chance of the bottom of the sandal slipping on wet  
25 ground.

Most prior sandal designs do not provide for any sort of drainage, and particularly, do not provide for any drainage from an upper surface of the sandal, through the footbed, and to the peripheral edge of the sandal. Accordingly, what is desired, and has not heretofore been

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provided, is a sandal with a drainage system to drain water from the upper surface of the sandal, through the footbed and out a drainage channel to exit apertures about the peripheral edge of the sandal.

SUMMARY OF THE INVENTION

The present invention provides a sandal with a drainage system. The sandal includes a footbed having an upper support surface, a bottom sole, and a central portion therebetween. A retaining strap is interconnected with the footbed for retaining the sandal on a foot. A plurality of drainage apertures are provided on the upper support surface of the footbed. A vertical drainage channel extends from each drainage aperture into the central portion of the footbed. A plurality of horizontal drainage channels extend within the central portion of the footbed from the vertical drainage channels to exit apertures about a peripheral edge of the sandal.

In one embodiment, the sandal of the present invention includes two forward drainage apertures on the upper support surface of the footbed with forward vertical drainage channels extending from each aperture into the central portion of a footbed. A forward horizontal drainage channel extends from a medial side to a lateral side of the peripheral edge of the sandal and interconnects with the forward vertical drainage channels. The sandal also includes two midsole drainage apertures in the upper support surface from which midsole vertical drainage channels extend into the central footbed. A midsole horizontal drainage channel extends from a medial side to a lateral side of the peripheral edge of the sandal and interconnects with the midsole vertical drainage channels. The sandal further includes two heel drainage apertures in the upper support surface from which extend heel vertical drainage channels that interconnect with a horizontal heel drainage channel, which extends from a medial side to a lateral side of the peripheral edge of the sandal. The sandal additionally includes a rear drainage aperture in the upper support surface from which extends a rear vertical drainage channel that connects with a

horizontal drainage channel, which extends rearward to a back portion of the peripheral edge of the sandal.

In another embodiment, the sandal of the present invention includes two forward  
5 drainage apertures on the upper support surface of the footbed with forward vertical drainage  
channels extending from each aperture into the central portion of a footbed. Forward horizontal  
drainage channels interconnect with each vertical drainage channel, and extend from each  
vertical drainage channel to the peripheral edge of the sandal. The sandal also includes two  
midsole drainage apertures in the upper support surface from which midsole vertical drainage  
10 channels extend into the central footbed. Midsole horizontal drainage channels interconnect with  
each midsole vertical drainage channel, and extend from each midsole vertical drainage channel  
to the peripheral edge of the sandal. The sandal further includes two heel drainage apertures in  
the upper support surface from which extend heel vertical drainage channels that interconnect  
with horizontal heel drainage channels, which extend from the heel vertical drainage channels to  
15 the peripheral edge of the sandal. The sandal additionally includes a rear drainage aperture in the  
upper support surface from which extends a rear vertical drainage channel that connects with a  
horizontal drainage channel, which extends rearward to a back portion of the peripheral edge of  
the sandal. In this embodiment, the number and location of drainage apertures can be varied, but  
each drainage aperture is associated with a dedicated drainage channel, including a vertical and a  
20 horizontal drainage channel.

BRIEF DESCRIPTION OF THE DRAWINGS

Other important objects and features of the invention will be apparent from the following Detailed Description of the Invention taken in connection with the accompanying drawings in which:

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**FIG. 1** is a top view of a sandal with a drainage system of the present invention.

**FIG. 2** is a side view of the sandal shown in **FIG. 1**.

10 **FIG. 3** is a cross-sectional view of the sandal shown in **FIG. 2**, taken along the line 3-3.

**FIG. 4** is a rear view of the sandal shown in **FIG. 1**.

15 **FIG. 5** is a partial cross-sectional view of the sandal shown in **FIG. 1**, taken along the line 5-5.

**FIG. 6** is a top view of another embodiment of a sandal with the drainage system of the present invention.

20 **FIG. 7** is a cross-sectional view of the sandal shown in **FIG. 6**.

DETAILED DESCRIPTION OF THE INVENTION

The present invention provides a sandal with a drainage system. The sandal includes a footbed having an upper support surface, a bottom sole, and a central portion therebetween. A retaining strap is interconnected with the footbed for retaining the sandal on a foot. A plurality of drainage apertures are provided on the upper support surface of the footbed. A vertical drainage channel extends from each drainage aperture into the central portion of the footbed. By the term "vertical" it is meant a direction generally perpendicular to the footbed. A plurality of horizontal drainage channels extend within the central portion of the footbed from the vertical drainage channels to exit apertures about a peripheral edge of the sandal. By the term "horizontal" it is meant a direction generally parallel to the bottom sole of the sandal. Of course, the horizontal channels could be pitched to aid drainage, if desired.

The sandal of the present invention is shown in **FIGS. 1-7**. **FIG. 1** is a top view of the sandal, generally indicated at **10**. The sandal **10** includes a foot strap **12** that can be configured and attached in accordance with what is known in the art. The foot strap **12** may include a strap retainer **14** which fits between the toes of a foot. However, such a strap retainer **14** is not required. Further, the foot strap **12** and retainer **14** could be substituted with an upper of any desired design, to create a flip-flop, thong, slide, or other desired style. The sandal **10** includes a footbed having an upper surface **20** and a peripheral edge **26**. The size and shape of the footbed can be varied in accordance with what is known in the art. Additionally, the materials from which the footbed is constructed can be varied in accordance with what is known in the art.

The footbed of the present invention includes a three layer construction: an upper surface **20**, a bottom sole (**FIG. 2**, reference numeral **22**) and a central footbed portion (**FIG. 2**, reference numeral **24**). The upper surface **20** could be a finished surface of the central footbed portion. However, the present invention could be implemented wherein the footbed has any desired  
5 number of layers. The upper surface **20** could include a ridge **21** that follows the peripheral edge **26** and is spaced inwardly therefrom. A depression **23** is surrounded by the ridge **21**. The depression **23** receives a foot and aids drainage.

The upper surface of the footbed has a plurality of drainage apertures including forward  
10 drainage apertures **30A**, midsole drainage apertures **30B**, heel drainage apertures **30C**, and rear drainage aperture **30D**. The number of drainage apertures, as well as the location of the drainage apertures, can be varied as desired.

As can be seen in phantom in **FIG. 1**, a plurality of horizontal drainage channels, which  
15 are interconnected with vertical drainage channels extending from the drainage apertures, extend to the side wall **26** of the footbed of the sandal **10**. As shown in **FIG. 1**, the sandal **10** includes a forward horizontal drainage channel **34A**, a midsole horizontal drainage channel **34B**, a heel horizontal drainage channel **34C**, and a rear horizontal drainage channel **34D**. The forward, midsole, and rear drainage channels extend from medial to lateral sides of the peripheral edge **20**  
20 of the footbed of sandal **10**. The rear horizontal drainage channel **34D** extends to a back portion of the peripheral edge **20** of the footbed of sandal **10**. It should be noted that the orientation of the drainage channels need not be limited to a horizontal direction.

**FIG. 2** is a side view of the sandal **10** shown in **FIG. 1**. As can be seen, the sandal **10** includes a foot strap **12** and a strap retainer **14**. Again, the foot strap **12** can be varied in accordance with what is known in the art. For example, it could be a strap, a thong, or other sandal upper configuration. The footbed includes an upper surface **20**, a bottom sole **22**, and a central footbed portion **24**. Again, this construction can be varied. A plurality of exit apertures are shown along the peripheral edge **26** of the central footbed portion, including forward exit aperture **36A**, midsole exit aperture **36B**, and heel exit aperture **36C**. As shown in phantom, a plurality of vertical drainage channels extend into the footbed from the drainage apertures in the upper surface of the footbed to the horizontal drainage channels, including forward vertical drainage channel **32A**, midsole vertical drainage channel **32B**, heel vertical drainage channel **32C**, and rear vertical drainage channel **32D**.

**FIG. 3** is a cross-sectional view of the footbed of the sandal **10** shown in **FIG. 2**, taken along line 3-3. As can be seen, the central footbed portion **24** includes a plurality of horizontal drainage channels that lead to exit apertures along the peripheral edge **26**, including forward drainage channel **34A** leading to exit apertures **36A**, midsole horizontal drainage channel **34B** leading to midsole exit apertures **36B**, heel horizontal drainage channels **34C** leading to heel exit apertures **36C** and rear horizontal drainage channel **34D** leading to rear exit aperture **36D**.

**FIG. 4** is a rear view of the sandal **10** shown in **FIG. 1**. The foot strap **12** and retaining strap **14** are shown interconnected with the footbed. The footbed includes an upper surface **20**, a central footbed portion **24** and a bottom sole **22**. The footbed has a peripheral edge **26**. Rear vertical drainage channel **32D** is shown in phantom and it leads to rear horizontal drainage



channel that extends to exit aperture **36D**. Also, along the peripheral edges, forward exit apertures **36A** and midsole exit apertures **36B** can be seen.

**FIG. 5** is a partial cross-sectional view of the sandal **10** shown in **FIG. 1**, taken along the line 5-5 to show the construction of the rear portion of the drainage system. As can be seen, the footbed includes upper surface **20**, central footbed portion **24** and bottom sole **22**. Rear vertical drainage aperture **32D** is interconnected with rear horizontal drainage channel **34D**, which extends to rear exit aperture **36D** at a rear portion of the peripheral edge **26** of the sandal **10**.

In use, water drains from the upper surface **20** of the sandal **10** through the drainage apertures **30A, B, C, D** into the vertical drainage channels **32A, B, C, D**, through the horizontal drainage channels **34A, B, C, D** and out the exit apertures **36A, B, C, D** of the peripheral edge **20** of the sandal **10**. As such, if the sandal **10** is submersed in water, or exposed to water because a wet bather steps into a pair of the sandals, water will quickly drain off the upper surface **20**, through the footbed, out the exit apertures, and away from the shoe to minimize the possibility of slipping, either by the foot slipping on the upper surface of the sandal or the sole of the surface slipping on wet ground. Additionally, because of this drainage feature, the sandal will be maintained in a condition that is comfortable to wear.

**FIG. 6** is a top view of another embodiment of a sandal having the drainage system of the present invention, indicated generally at **110**. The construction of the sandal **110** is similar to that shown in **FIG. 1** and described earlier. However, in the embodiment shown in **FIG. 6**, each drainage aperture has its own dedicated drainage channel. As such, forward drainage apertures

130A are interconnected with front exit apertures 136A by front vertical drainage channels and independent front horizontal drainage channels 134A. Midsole drainage apertures 130B are interconnected with midsole exit apertures 136B by midsole vertical drainage channels and independent midsole horizontal drainage channels 134B. Heel drainage apertures 130C are interconnected with heel exit apertures 136C by heel vertical drainage channels and independent heel horizontal drainage channels 134C. Rear drainage aperture 130D is interconnected with rear exit aperture 136D by a rear vertical drainage channel and rear horizontal drainage channel 134D. The number of drainage apertures, as well as the location of the drainage apertures, can be varied as desired, and independent horizontal drainage channels interconnected therewith.

FIG. 7 is a cross-sectional view of the sandal shown in FIG. 6. Each of the drainage apertures 130A, B, C, D shown in FIG. 7 interconnect with independent horizontal drainage channels 134A, B, C, D via vertical drainage channels connected therebetween. The horizontal drainage channels 134A, B, C, D connect to exit apertures 136A, B, C, D on the peripheral edge 126 of the sandal 110. Each of the channels 134A, B, C, D could be pitched to aid drainage. Additionally, the channels 134A, B, C, D could be oriented at any desired angle within the footbed. Each of the channels 134A, B, C, D channels water from the apertures 130A, B, C, D to exit apertures 136A, B, C, D.

The apertures and drainage channels of the present invention can be formed in accordance with what is known in the art. The drainage system can be formed during the manufacture of the components of the sandal, *i.e.*, during molding of the footbed, or the system can be created after the footbed is manufactured by removing material therefrom. In a preferred

embodiment of the present invention, the footbed is molded ethyl vinyl acetate (EVA), but of course, other suitable materials could be used. For example, a rubber outsole could be used. After molding, the footbed is die cut and the upper is lasted to it. The footbed could be glued or otherwise attached to the midsole and/or a bottom sole. The sides can then be sand finished.

5 The drainage system can be formed by drilling the apertures, vertical drainage channels, and horizontal drainage channels into the footbed. The footbed of the sandals of the present invention can be used with any desired style of upper. The upper can be cut from a desired material and sewn to the footbed, or injection molded and applied to the footbed.

10 Having thus described the invention in detail, it is to be understood that the foregoing description is not intended to limit the spirit and scope thereof. What is desired to be protected by Letters Patent is set forth in the appended claims.